

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-28969-1

Client Project/Site: Olin Chemical Wilmington MA Superfund S

Revision: 2

For:

Olin Corporation

PO BOX 248

Charleston, Tennessee 37310-0248

Attn: Mr. James Cashwell

CHECKED FOR COMPLETENESS
OF PARAMETERS ORDERED BY:

Authorized for release by:
12/21/2012 9:42:24 AM

Becky Mason
Project Manager II
becky.mason@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Qualifiers

GC Semi VOA

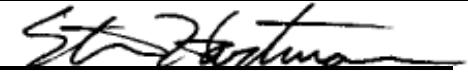
Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

干	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

MassDEP Analytical Protocol Certification Form

Laboratory Name:	TestAmerica Buffalo		Project #:	480-28969-1	
Project Location:	Olin, Wilmington		RTN:		
This form provides certifications for the following data set: list Laboratory Sample ID Number(s):					
480-28669-(1-11)					
Matrices:	<input type="checkbox"/> Groundwater/Surface Water	<input checked="" type="checkbox"/> Soil/Sediment	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Air	<input type="checkbox"/> Other:
CAM Protocols (check all that apply below):					
8260 VOC CAM II A	7470/7471 Hg CAM III B	Mass DEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	Mass DEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	Mass DEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	
Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status					
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Responses to Questions G, H and I below are required for "Presumptive Certainty" status					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
¹ All negative responses must be addressed in an attached laboratory narrative.					
<i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.</i>					
Signature:			Position:	Laboratory Director-TestAmerica Westfield	
Printed Name:	Steven C. Hartmann		Date:	12/5/12 10:01	
This form has been electronically signed and approved					

Case Narrative

Client: Olin Corporation
Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Job ID: 480-28969-1

Laboratory: TestAmerica Buffalo

Narrative

Second Revision: Report was revised on 12/21 to change samples ID's: OC-SB-530-1.0-3.0-XXX (480-28969-7) and OC-SB-531-1.0-3.0 (480-28969-8) per client request. The COC has also been changed per client request. This final report replaces the final report generated on 12/05/12.

Revision: Report was revised on 12/05/2012 to change several sample ID's per client request. This final report replaces the final report generated on 12/05/2012.

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/23/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.0 C.

TestAmerica's Reporting Limits (RLs) for this report may not always meet client specified method reporting limits due to various reasons such as methodology, dilutions, matrix or moisture content (soils). TestAmerica's pivot table EDD documents which compound(s) exceed certain regulatory standards. If not included with your deliverables, please contact your Project Manager about the availability of this EDD for your report.

POLYCHLORINATED BIPHENYLS (PCBs)

Samples OC-SS-501 (480-28969-1), OC-SS-502 (480-28969-2), OC-SS-503 (480-28969-3), OC-SS-504 (480-28969-4), OC-SS-505 (480-28969-5), OC-SS-506 (480-28969-6), OC-SB-530-1.0-3.0 (480-28969-7), OC-SB-531-1.0-3.0 (480-28969-8), OC-SS-509 (480-28969-9), OC-SS-507 (480-28969-10) and OC-SS-508 (480-28969-11) were analyzed for polychlorinated biphenyls (PCBs) in accordance with SW846 8082A. The samples were prepared on 11/24/2012 and analyzed on 11/25/2012.

PCB-1242 was detected in method blank MB 480-92526/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

The following sample was diluted due to the abundance of target analytes: OC-SB-530-1.0-3.0 (480-28969-7). As such, surrogate recoveries are not representative, and elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Samples OC-SS-501 (480-28969-1), OC-SS-502 (480-28969-2), OC-SS-503 (480-28969-3), OC-SS-504 (480-28969-4), OC-SS-505 (480-28969-5), OC-SS-506 (480-28969-6), OC-SB-530-1.0-3.0 (480-28969-7), OC-SB-531-1.0-3.0 (480-28969-8), OC-SS-509 (480-28969-9), OC-SS-507 (480-28969-10) and OC-SS-508 (480-28969-11) were analyzed for percent solids in accordance with EPA Moisture. The samples were analyzed on 11/23/2012.

No difficulties were encountered during the % solids analyses.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Client Sample ID: OC-SS-501

Lab Sample ID: 480-28969-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	1000		200	20	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-502

Lab Sample ID: 480-28969-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	230		200	20	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-503

Lab Sample ID: 480-28969-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	500		190	19	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-504

Lab Sample ID: 480-28969-4

No Detections

Client Sample ID: OC-SS-505

Lab Sample ID: 480-28969-5

No Detections

Client Sample ID: OC-SS-506

Lab Sample ID: 480-28969-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	390		210	21	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SB-530-1.0-3.0

Lab Sample ID: 480-28969-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	10000		2700	270	ug/Kg	10	⊗	8082	Total/NA

Client Sample ID: OC-SB-531-1.0-3.0

Lab Sample ID: 480-28969-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	300		210	21	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-509

Lab Sample ID: 480-28969-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	34	J	250	25	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-507

Lab Sample ID: 480-28969-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	470		190	19	ug/Kg	1	⊗	8082	Total/NA

Client Sample ID: OC-SS-508

Lab Sample ID: 480-28969-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	24	J	190	19	ug/Kg	1	⊗	8082	Total/NA

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Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Client Sample ID: OC-SS-501

Date Collected: 11/20/12 12:05

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-1

Matrix: Solid

Percent Solids: 88.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1221	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1232	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1242	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1248	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1254	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1260	1000		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1262	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
PCB-1268	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	93		30 - 150				11/24/12 07:25	11/25/12 07:09	1
Tetrachloro-m-xylene	78		30 - 150				11/24/12 07:25	11/25/12 07:09	1
DCB Decachlorobiphenyl	104		30 - 150				11/24/12 07:25	11/25/12 07:09	1
DCB Decachlorobiphenyl	93		30 - 150				11/24/12 07:25	11/25/12 07:09	1

Client Sample ID: OC-SS-502

Date Collected: 11/20/12 12:10

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-2

Matrix: Solid

Percent Solids: 91.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1221	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1232	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1242	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1248	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1254	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1260	230		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1262	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
PCB-1268	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		30 - 150				11/24/12 07:25	11/25/12 07:24	1
Tetrachloro-m-xylene	65		30 - 150				11/24/12 07:25	11/25/12 07:24	1
DCB Decachlorobiphenyl	95		30 - 150				11/24/12 07:25	11/25/12 07:24	1
DCB Decachlorobiphenyl	92		30 - 150				11/24/12 07:25	11/25/12 07:24	1

Client Sample ID: OC-SS-503

Date Collected: 11/20/12 12:15

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-3

Matrix: Solid

Percent Solids: 91.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1221	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1232	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1242	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1248	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1254	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1260	500		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1262	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1
PCB-1268	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:39	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		30 - 150	11/24/12 07:25	11/25/12 07:39	1
Tetrachloro-m-xylene	67		30 - 150	11/24/12 07:25	11/25/12 07:39	1
DCB Decachlorobiphenyl	102		30 - 150	11/24/12 07:25	11/25/12 07:39	1
DCB Decachlorobiphenyl	92		30 - 150	11/24/12 07:25	11/25/12 07:39	1

Client Sample ID: OC-SS-504

Date Collected: 11/20/12 12:25

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-4

Matrix: Solid

Percent Solids: 93.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1221	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1232	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1242	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1248	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1254	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1260	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1262	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1
PCB-1268	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 07:54	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	73		30 - 150	11/24/12 07:25	11/25/12 07:54	1
Tetrachloro-m-xylene	64		30 - 150	11/24/12 07:25	11/25/12 07:54	1
DCB Decachlorobiphenyl	90		30 - 150	11/24/12 07:25	11/25/12 07:54	1
DCB Decachlorobiphenyl	81		30 - 150	11/24/12 07:25	11/25/12 07:54	1

Client Sample ID: OC-SS-505

Date Collected: 11/20/12 12:35

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-5

Matrix: Solid

Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1221	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1232	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1242	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1248	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1254	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1260	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1262	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1
PCB-1268	ND		200	20	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:16	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	63		30 - 150	11/24/12 07:25	11/25/12 08:16	1
Tetrachloro-m-xylene	55		30 - 150	11/24/12 07:25	11/25/12 08:16	1
DCB Decachlorobiphenyl	78		30 - 150	11/24/12 07:25	11/25/12 08:16	1
DCB Decachlorobiphenyl	70		30 - 150	11/24/12 07:25	11/25/12 08:16	1

Client Sample ID: OC-SS-506

Date Collected: 11/20/12 12:45

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-6

Matrix: Solid

Percent Solids: 91.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:31	1
PCB-1221	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:31	1
PCB-1232	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:31	1
PCB-1242	ND		210	21	ug/Kg	⊗	11/24/12 07:25	11/25/12 08:31	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Client Sample ID: OC-SS-506

Date Collected: 11/20/12 12:45

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-6

Matrix: Solid

Percent Solids: 91.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 08:31	1
PCB-1254	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 08:31	1
PCB-1260	390		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 08:31	1
PCB-1262	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 08:31	1
PCB-1268	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 08:31	1
Surrogate	%Recovery	Qualifier			Limits				
Tetrachloro-m-xylene	76				30 - 150				
Tetrachloro-m-xylene	65				30 - 150				
DCB Decachlorobiphenyl	91				30 - 150				
DCB Decachlorobiphenyl	85				30 - 150				

Client Sample ID: OC-SB-530-1.0-3.0

Date Collected: 11/20/12 13:25

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-7

Matrix: Solid

Percent Solids: 69.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1221	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1232	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1242	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1248	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1254	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1260	10000		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1262	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
PCB-1268	ND		2700	270	ug/Kg	☀	11/24/12 07:25	11/25/12 10:29	10
Surrogate	%Recovery	Qualifier			Limits				
Tetrachloro-m-xylene	89				30 - 150				
Tetrachloro-m-xylene	83				30 - 150				
DCB Decachlorobiphenyl	23	X			30 - 150				
DCB Decachlorobiphenyl	116				30 - 150				

Client Sample ID: OC-SB-531-1.0-3.0

Date Collected: 11/20/12 13:45

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-8

Matrix: Solid

Percent Solids: 83.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1221	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1232	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1242	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1248	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1254	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1260	300		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1262	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
PCB-1268	ND		210	21	ug/Kg	☀	11/24/12 07:25	11/25/12 09:30	1
Surrogate	%Recovery	Qualifier			Limits				
Tetrachloro-m-xylene	66				30 - 150				
Tetrachloro-m-xylene	59				30 - 150				
DCB Decachlorobiphenyl	92				30 - 150				
DCB Decachlorobiphenyl	86				30 - 150				

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Client Sample ID: OC-SS-509

Date Collected: 11/20/12 14:00

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-9

Matrix: Solid

Percent Solids: 78.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1221	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1232	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1242	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1248	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1254	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1260	34 J		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1262	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
PCB-1268	ND		250	25	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	74		30 - 150				11/24/12 07:25	11/25/12 09:44	1
Tetrachloro-m-xylene	66		30 - 150				11/24/12 07:25	11/25/12 09:44	1
DCB Decachlorobiphenyl	90		30 - 150				11/24/12 07:25	11/25/12 09:44	1
DCB Decachlorobiphenyl	81		30 - 150				11/24/12 07:25	11/25/12 09:44	1

Client Sample ID: OC-SS-507

Date Collected: 11/20/12 14:05

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-10

Matrix: Solid

Percent Solids: 96.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1221	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1232	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1242	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1248	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1254	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1260	470		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1262	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
PCB-1268	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 09:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	87		30 - 150				11/24/12 07:25	11/25/12 09:59	1
Tetrachloro-m-xylene	76		30 - 150				11/24/12 07:25	11/25/12 09:59	1
DCB Decachlorobiphenyl	101		30 - 150				11/24/12 07:25	11/25/12 09:59	1
DCB Decachlorobiphenyl	91		30 - 150				11/24/12 07:25	11/25/12 09:59	1

Client Sample ID: OC-SS-508

Date Collected: 11/20/12 14:15

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-11

Matrix: Solid

Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1221	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1232	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1242	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1248	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1254	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1260	24 J		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1262	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1
PCB-1268	ND		190	19	ug/Kg	⊗	11/24/12 07:25	11/25/12 10:14	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		30 - 150	11/24/12 07:25	11/25/12 10:14	1
Tetrachloro-m-xylene	69		30 - 150	11/24/12 07:25	11/25/12 10:14	1
DCB Decachlorobiphenyl	85		30 - 150	11/24/12 07:25	11/25/12 10:14	1
DCB Decachlorobiphenyl	76		30 - 150	11/24/12 07:25	11/25/12 10:14	1

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Client Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28969-1

Project/Site: Olin Chemical Wilmington MA Superfund S

General Chemistry

Client Sample ID: OC-SS-501

Date Collected: 11/20/12 12:05

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	89		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-1

Matrix: Solid

Client Sample ID: OC-SS-502

Date Collected: 11/20/12 12:10

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.8		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	91		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-2

Matrix: Solid

Client Sample ID: OC-SS-503

Date Collected: 11/20/12 12:15

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.2		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	92		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-3

Matrix: Solid

Client Sample ID: OC-SS-504

Date Collected: 11/20/12 12:25

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.6		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	93		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-4

Matrix: Solid

Client Sample ID: OC-SS-505

Date Collected: 11/20/12 12:35

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.5		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	93		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-5

Matrix: Solid

Client Sample ID: OC-SS-506

Date Collected: 11/20/12 12:45

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.8		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	91		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-6

Matrix: Solid

Client Sample ID: OC-SB-530-1.0-3.0

Date Collected: 11/20/12 13:25

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	30		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	70		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-7

Matrix: Solid

Client Sample ID: OC-SB-531-1.0-3.0

Date Collected: 11/20/12 13:45

Date Received: 11/23/12 08:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	83		0.10	0.10	%			11/23/12 11:24	1

Lab Sample ID: 480-28969-8

Matrix: Solid

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

General Chemistry

Client Sample ID: OC-SS-509

Date Collected: 11/20/12 14:00

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-9

Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	79		0.10	0.10	%			11/23/12 11:24	1

Client Sample ID: OC-SS-507

Date Collected: 11/20/12 14:05

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-10

Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.1		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	97		0.10	0.10	%			11/23/12 11:24	1

Client Sample ID: OC-SS-508

Date Collected: 11/20/12 14:15

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-11

Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.5		0.10	0.10	%			11/23/12 11:24	1
Percent Solids	95		0.10	0.10	%			11/23/12 11:24	1

Surrogate Summary

Client: Olin Corporation

TestAmerica Job ID: 480-28969-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (30-150)	TCX2 (30-150)	DCB1 (30-150)	DCB2 (30-150)
480-28969-1	OC-SS-501	93	78	104	93
480-28969-2	OC-SS-502	77	65	95	92
480-28969-3	OC-SS-503	78	67	102	92
480-28969-4	OC-SS-504	73	64	90	81
480-28969-5	OC-SS-505	63	55	78	70
480-28969-6	OC-SS-506	76	65	91	85
480-28969-7	OC-SB-530-1.0-3.0	89	83	23 X	116
480-28969-8	OC-SB-531-1.0-3.0	66	59	92	86
480-28969-9	OC-SS-509	74	66	90	81
480-28969-10	OC-SS-507	87	76	101	91
480-28969-11	OC-SS-508	75	69	85	76
LCS 480-92526/2-A	Lab Control Sample	85	67	100	94
LCSD 480-92526/3-A	Lab Control Sample Dup	87	70	104	94
MB 480-92526/1-A	Method Blank	74	64	90	88

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

QC Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Lab Sample ID: MB 480-92526/1-A

Matrix: Solid

Analysis Batch: 92606

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 92526

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							Prepared	Analyzed	Dil Fac
PCB-1016	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1221	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1232	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1242	26.5	J			180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1248	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1254	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1260	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1262	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1268	ND				180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	Result	Qualifier				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	74		30 - 150			11/24/12 07:25	11/25/12 06:04	1
Tetrachloro-m-xylene	64		30 - 150			11/24/12 07:25	11/25/12 06:04	1
DCB Decachlorobiphenyl	90		30 - 150			11/24/12 07:25	11/25/12 06:04	1
DCB Decachlorobiphenyl	88		30 - 150			11/24/12 07:25	11/25/12 06:04	1

Lab Sample ID: LCS 480-92526/2-A

Matrix: Solid

Analysis Batch: 92606

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 92526

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec.	Limits
	Added	Result	Qualifier					%Rec	
PCB-1016		947		693		ug/Kg		73	40 - 140
PCB-1260		947		676		ug/Kg		71	40 - 140

Surrogate	LCSD	LCSD	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	Result	Qualifier				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	85		30 - 150					
Tetrachloro-m-xylene	67		30 - 150					
DCB Decachlorobiphenyl	100		30 - 150					
DCB Decachlorobiphenyl	94		30 - 150					

Lab Sample ID: LCSD 480-92526/3-A

Matrix: Solid

Analysis Batch: 92606

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 92526

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec.	RPD	Limit
	Added	Result	Qualifier					%Rec		
PCB-1016		917		694		ug/Kg		76	40 - 140	0 30
PCB-1260		917		676		ug/Kg		74	40 - 140	0 30

Surrogate	LCSD	LCSD	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	Result	Qualifier				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	87		30 - 150					
Tetrachloro-m-xylene	70		30 - 150					
DCB Decachlorobiphenyl	104		30 - 150					
DCB Decachlorobiphenyl	94		30 - 150					

TestAmerica Buffalo

QC Association Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

GC Semi VOA

Prep Batch: 92526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28969-1	OC-SS-501	Total/NA	Solid	3546	5
480-28969-2	OC-SS-502	Total/NA	Solid	3546	6
480-28969-3	OC-SS-503	Total/NA	Solid	3546	7
480-28969-4	OC-SS-504	Total/NA	Solid	3546	8
480-28969-5	OC-SS-505	Total/NA	Solid	3546	9
480-28969-6	OC-SS-506	Total/NA	Solid	3546	10
480-28969-7	OC-SB-530-1.0-3.0	Total/NA	Solid	3546	11
480-28969-8	OC-SB-531-1.0-3.0	Total/NA	Solid	3546	12
480-28969-9	OC-SS-509	Total/NA	Solid	3546	13
480-28969-10	OC-SS-507	Total/NA	Solid	3546	14
480-28969-11	OC-SS-508	Total/NA	Solid	3546	15
LCS 480-92526/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 480-92526/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
MB 480-92526/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 92606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28969-1	OC-SS-501	Total/NA	Solid	8082	92526
480-28969-2	OC-SS-502	Total/NA	Solid	8082	92526
480-28969-3	OC-SS-503	Total/NA	Solid	8082	92526
480-28969-4	OC-SS-504	Total/NA	Solid	8082	92526
480-28969-5	OC-SS-505	Total/NA	Solid	8082	92526
480-28969-6	OC-SS-506	Total/NA	Solid	8082	92526
480-28969-7	OC-SB-530-1.0-3.0	Total/NA	Solid	8082	92526
480-28969-8	OC-SB-531-1.0-3.0	Total/NA	Solid	8082	92526
480-28969-9	OC-SS-509	Total/NA	Solid	8082	92526
480-28969-10	OC-SS-507	Total/NA	Solid	8082	92526
480-28969-11	OC-SS-508	Total/NA	Solid	8082	92526
LCS 480-92526/2-A	Lab Control Sample	Total/NA	Solid	8082	92526
LCSD 480-92526/3-A	Lab Control Sample Dup	Total/NA	Solid	8082	92526
MB 480-92526/1-A	Method Blank	Total/NA	Solid	8082	92526

General Chemistry

Analysis Batch: 92452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28969-1	OC-SS-501	Total/NA	Solid	Moisture	
480-28969-2	OC-SS-502	Total/NA	Solid	Moisture	
480-28969-3	OC-SS-503	Total/NA	Solid	Moisture	
480-28969-4	OC-SS-504	Total/NA	Solid	Moisture	
480-28969-5	OC-SS-505	Total/NA	Solid	Moisture	
480-28969-6	OC-SS-506	Total/NA	Solid	Moisture	
480-28969-7	OC-SB-530-1.0-3.0	Total/NA	Solid	Moisture	
480-28969-8	OC-SB-531-1.0-3.0	Total/NA	Solid	Moisture	
480-28969-9	OC-SS-509	Total/NA	Solid	Moisture	
480-28969-10	OC-SS-507	Total/NA	Solid	Moisture	
480-28969-11	OC-SS-508	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Olin Corporation
 Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Client Sample ID: OC-SS-501

Date Collected: 11/20/12 12:05

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-1

Matrix: Solid

Percent Solids: 88.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 07:09	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-502

Date Collected: 11/20/12 12:10

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-2

Matrix: Solid

Percent Solids: 91.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 07:24	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-503

Date Collected: 11/20/12 12:15

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-3

Matrix: Solid

Percent Solids: 91.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 07:39	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-504

Date Collected: 11/20/12 12:25

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-4

Matrix: Solid

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 07:54	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-505

Date Collected: 11/20/12 12:35

Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-5

Matrix: Solid

Percent Solids: 93.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 08:16	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Olin Corporation
 Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Client Sample ID: OC-SS-506

Date Collected: 11/20/12 12:45
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-6

Matrix: Solid
Percent Solids: 91.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 08:31	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SB-530-1.0-3.0

Date Collected: 11/20/12 13:25
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-7

Matrix: Solid
Percent Solids: 69.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		10	92606	11/25/12 10:29	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SB-531-1.0-3.0

Date Collected: 11/20/12 13:45
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-8

Matrix: Solid
Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 09:30	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-509

Date Collected: 11/20/12 14:00
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-9

Matrix: Solid
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 09:44	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Client Sample ID: OC-SS-507

Date Collected: 11/20/12 14:05
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-10

Matrix: Solid
Percent Solids: 96.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 09:59	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Client Sample ID: OC-SS-508

Lab Sample ID: 480-28969-11

Date Collected: 11/20/12 14:15

Matrix: Solid

Date Received: 11/23/12 08:00

Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			92526	11/24/12 07:25	MRB	TAL BUF
Total/NA	Analysis	8082		1	92606	11/25/12 10:14	JM	TAL BUF
Total/NA	Analysis	Moisture		1	92452	11/23/12 11:24	MD	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-13
California	NELAP	9	1169CA	09-30-13
Connecticut	State Program	1	PH-0568	09-30-14
Florida	NELAP	4	E87672	06-30-13
Georgia	State Program	4	N/A	03-31-13
Georgia	State Program	4	956	06-30-13
Georgia	State Program	4	956	06-30-13
Illinois	NELAP	5	200003	09-30-13
Iowa	State Program	7	374	03-01-13
Kansas	NELAP	7	E-10187	01-31-13
Kentucky	State Program	4	90029	12-31-12
Kentucky (UST)	State Program	4	30	04-01-13
Louisiana	NELAP	6	02031	06-30-13
Maine	State Program	1	NY00044	12-04-13
Maryland	State Program	3	294	03-31-13
Massachusetts	State Program	1	M-NY044	06-30-13
Michigan	State Program	5	9937	04-01-13
Minnesota	NELAP	5	036-999-337	12-31-12
New Hampshire	NELAP	1	2973	09-11-13
New Hampshire	NELAP	1	2337	11-17-13
New Jersey	NELAP	2	NY455	06-30-13
New York	NELAP	2	10026	03-31-13
North Dakota	State Program	8	R-176	03-31-13
Oklahoma	State Program	6	9421	08-31-13
Oregon	NELAP	10	NY200003	06-09-13
Pennsylvania	NELAP	3	68-00281	07-31-13
Rhode Island	State Program	1	LAO00328	12-31-13
Tennessee	State Program	4	TN02970	04-01-13
Texas	NELAP	6	T104704412-11-2	07-31-13
USDA	Federal		P330-11-00386	11-22-14
Virginia	NELAP	3	460185	09-14-13
Washington	State Program	10	C784	02-10-13
West Virginia DEP	State Program	3	252	09-30-13
Wisconsin	State Program	5	998310390	08-31-13

Method Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method	Method Description	Protocol	Laboratory
8082	Polychlorinated Biphenyls (GC/ECD)	MA DEP	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MA DEP = Massachusetts Department Of Environmental Protection

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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Sample Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-28969-1	OC-SS-501	Solid	11/20/12 12:05	11/23/12 08:00
480-28969-2	OC-SS-502	Solid	11/20/12 12:10	11/23/12 08:00
480-28969-3	OC-SS-503	Solid	11/20/12 12:15	11/23/12 08:00
480-28969-4	OC-SS-504	Solid	11/20/12 12:25	11/23/12 08:00
480-28969-5	OC-SS-505	Solid	11/20/12 12:35	11/23/12 08:00
480-28969-6	OC-SS-506	Solid	11/20/12 12:45	11/23/12 08:00
480-28969-7	OC-SB-530-1.0-3.0	Solid	11/20/12 13:25	11/23/12 08:00
480-28969-8	OC-SB-531-1.0-3.0	Solid	11/20/12 13:45	11/23/12 08:00
480-28969-9	OC-SS-509	Solid	11/20/12 14:00	11/23/12 08:00
480-28969-10	OC-SS-507	Solid	11/20/12 14:05	11/23/12 08:00
480-28969-11	OC-SS-508	Solid	11/20/12 14:15	11/23/12 08:00

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TestAmerica

Chain of Custody Record

Boston Service Center
 Westfield Executive Park 53 Southampton Road
 Westfield, MA 01086
 Phone (413) 572-4000 Fax (413) 572-3707

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sample: <u>Dowd Chrapman</u>	Lab PK#:	Carrier Tracking No.:	Doc. No.:	22068
Client Name: <u>David Chrapman</u>		Phone: <u>339-927-3793</u>	Email:	Page:	1 of 2	
Company: <u>AMEC E + I</u>		Analysis Requested				
Address: <u>2 Robbins Rd.</u>		Due Date Requested: <u>Standard</u>	Procedural Test Codes:			
City: <u>Westford, MA</u>		TAT Requested (days): <u>Standard</u>	A-HCl	J-DI Water		
State/Zip: <u>MA - 01822</u>		Quote #:	B-NaOH	M-Humic		
Phone: <u>978-692-9090</u>		PO#:	C-Zn Acetate	N-None		
Email: <u>david.chrapman@amec.com</u>		Project Number: <u>W01</u>	D-Nitric Acid	P-Na2CO3		
Site Name: <u>Wilmington 6071200L</u>		SSOW#:	E-KHCO3	Q-Na2SO3		
Site City: <u>Wilmington</u>		Sample ID:	F-Mg(OH)2	R-H2SO4		
		Date:	G-Acetic Acid	S-H2SO4		
		Time:	I-fer	Z-other (specify)		
		Sample Type:	MCP	<input checked="" type="checkbox"/>		
		(Cation, General)	RCP	<input type="checkbox"/>		
		Matrix:	CRSR	<input type="checkbox"/>		
		Special Instructions/Note:	DD Form	<input type="checkbox"/>		
			DD Required	<input type="checkbox"/>		
Field Number of Control Sample: <u>PCBS SW-846 8082</u>						
Sample Identification						
OC-SS-501	11-20-12	12:05	G	S		
CC-SS-502	/	12:10	/	/		
CC-SS-503	/	12:15	/	/		
OC-SS-504	/	12:25	/	/		
CC-SS-505	/	12:35	/	/		
OC-SS-506	/	12:45	/	/		
OC-SS-507	/	13:25	/	/		
OC-SS-508	/	13:25	/	/		
OC-SS-509	/	13:45	/	/		
OC-SS-510	/	14:00	/	/		
CC-SS-510	/	14:05	/	/		
Possible Hazard Identification: <input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						
Deliverable Requested: I, II, III, IV, Other (specify)						
Return To Client: <input type="checkbox"/> Return By Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archives For						
Special Instructions/CC Requirements:						
Received by: <u>David Chrapman</u>	Date/Time: <u>11-20-12 1:00:00</u>	Received by: <u>Jeffrey Dowd</u>	Date/Time: <u>11-20-12 1:00:00</u>	Comments: <u>Comments: C1002</u>		
Released by: <u>Jeffrey Dowd</u>	Date/Time: <u>11-20-12</u>	Released by: <u>Jeffrey Dowd</u>	Date/Time: <u>11-20-12</u>	Comments: <u>Comments: C1002</u>		
Custody Seal intact: <input checked="" type="checkbox"/> Custody Seal No: <u>Y-047</u>						
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Other Temperature(s) °C and Other Parameters:				

TAL-8245-360 1111

TestAmerica		Chain of Custody Record									
		THE LEADER IN ENVIRONMENTAL TESTING									
Boston Service Center		Phone (781) 468-6800 Fax (781) 468-6801									
Westfield Executive Park 55 Southampton Road Westfield, MA 01085 Phone (413) 572-4000 Fax (413) 572-3707		Sample: David Chapman Phone: 339-923-3793 Email:									
Client Information		Lab No.: 22067 Page: 2 of 2									
Company: A-MEC E + I		Carrier Tracking No.:									
Address: 2 Rotolens Rd.		Analysis Requested									
City: Westford		Preparation Codes:									
State: MA, 01882		<input type="checkbox"/> A-HCl <input type="checkbox"/> J-DI Water <input type="checkbox"/> B-NaOH <input type="checkbox"/> M-HClone <input type="checkbox"/> C-Zn Acetate <input type="checkbox"/> N-NaHS <input type="checkbox"/> D-Jim's Acid <input type="checkbox"/> P-Sodium <input type="checkbox"/> E-NaHSO4 <input type="checkbox"/> Q-Na2SO3 <input type="checkbox"/> F-NaOH <input type="checkbox"/> R-Na2S2O3 <input type="checkbox"/> G-H-Acetic Acid <input type="checkbox"/> S-R2S2O4 <input type="checkbox"/> H-Lac <input type="checkbox"/> T-Zinc Oxide <input type="checkbox"/> I-Glass <input type="checkbox"/> U-Other (Specify)									
Phone: 978-672-4000		Regulatory Programs:									
Email: David.Champron@amec.com		<input checked="" type="checkbox"/> GW/SI <input type="checkbox"/> RCRA <input type="checkbox"/> ROD Form <input type="checkbox"/> CTRSR <input type="checkbox"/> DDP Form <input type="checkbox"/> EDD Required									
Project Name/Number: Cain Wilmering 160712-C		Special Instructions/Notes:									
Site: Cain, Wilmington		PCB SW-846 E28Z To acquire									
Sample Identification		Sample Data									
ID: 0-C-55-511		Sample Date: 11-20-12 Sample Type: 5 Sample Time: 11:15 AM Sample Container: 2 Sample Grub: 1									
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison A <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (Specify)											
Received by: <i>David Chapman</i>		Received By: <i>John D.</i>									
Transferred by: <i>John D.</i>		Transferred By: <i>John D.</i>									
Released by: <i>John D.</i>		Released By: <i>John D.</i>									
Custody Seal intact: <input type="checkbox"/> Yes & <input type="checkbox"/> No		Custody Seal No.: <i>22067</i>									
Colder Temperature(°C) and Other Remarks:											
TAL-SP245-360 1111											

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12/21/2012

Login Sample Receipt Checklist

Client: Olin Corporation

Job Number: 480-28969-1

Login Number: 28969

List Source: TestAmerica Buffalo

List Number: 1

Creator: Robitaille, Zach L

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	AMEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	